DOCUMENT RESUME

ED 135 858 TM 006 089

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TITLE Basic Skills: What Competencies Shall Be Measured and How?
PUB DATE [Apr 77]
NOTE 30p.; Paper presented at the Annual Meeting of the American Educational Research Association (61st, New York, New York, April 4-8, 1977)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Armed Forces; *Basic Skills; Business; Citizenship Responsibility; Criterion Referenced Tests; *Educational Assessment; Federal Government; Job Skills; Social Responsibility; *State Programs; *Testing Programs
IDENTIFIERS New Jersey Educational Assessment Program

ABSTRACT

This paper represents a summary statement on an investigation into the area of statewide testing of minimum basic skills conducted last year for the New Jersey Task Force on Competency Indicators and Standards. Survey work and the study of source documents led to the following conclusions: (1) there was no obvious and agreed upon set of employment skills but that these, to the extent that employers will even talk about them, varied widely from job to job (perhaps a large scale job analysis might be more revealing); (2) there was no obvious and agreed upon set of social and citizenship skills required by all people; (3) having a minimum competency test on common employment, social and citizenship skills cannot be accomplished at this time without a large scale job analysis; (4) competency tests can be and have been built and are characteristically of the criterion-referenced type; (5) nationally, although competency tests exist and are used typically to measure basic skills in reading and math, rarely does performance on them constitute a graduation requirement; and (6) the state testing program in New Jersey in reading and math, like tests in many other places, seemed to go beyond the basics of reading and math into abstract levels which may not need to be mastered by all or even most students. (Author/MV)

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Basic Skills: What Competencies Shall be Measured and How?

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ABSTRACT

This paper was intended to answer the following questions:

(1) are there a common set of skills needed for employment that can be identified?
(2) are there a common set of skills needed for citizenship and social participation that can be identified?
(3) can the results of answering questions 1 and 2 form the basis for a minimum competency test?
(4) what form of test instrument should be used to measure minimum competencies?
(5) can the current New Jersey state testing program be used for assessing minimum competencies?
(6) what have other states (and cities) done to measure minimum basic competencies and graduation requirements and does a useful pattern or model emerge?

Survey work and the study of source documents led to the following conclusions:

(1) there is no obvious and agreed upon set of employment skills but that these, to the extent that employers will even talk about them, very widely from job to job (perhaps a large scale job analysis might be more revealing);
(2) there is no obvious and agreed upon set of social and citizenship skills required by all people;
(3) having a minimum competency test on common employment, social and citizenship skills cannot be accomplished at this time without a large scale job analysis;
(4) competency tests can be and have been built and are characteristically of the criterion-referenced type;
(5) nationally, although competency tests exist and are used-typically to measure basic skills in reading and math, rarely does performance on them constitute a graduation requirement;
(6) the state testing program in New Jersey in reading and math, like tests in many other places, seems to go beyond the basics of reading and math into abstract levels which may not need to be mastered by all or even most students.

Paper presented to the Annual Meeting of the American Educational Research Association, New York City, April 1977.

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The present paper represents a summary statement an investigation into the area of statewide testing of minimum basic skills that we conducted last year for the New Jersey Task Force on Competency Indicators and Standards.

The first set of issues that we dealt with concerned the identification of minimum basic skills needed for employment in business, government and the armed services as well as a consideration of the minimum basic skills required for adequate functioning in various other social roles.

It would appear to be obvious that there are minimum basic skills which each person must bring to the job market to gain employment, and to his/her various roles as a citizen, parent, and social participant in general. Yet surveys we made of employers, and of the relevant research and literature, led us to two broad conclusions:

1. Employment Skills -

   While educational level attained and employment status have been shown to be highly related, that relationship is complex and continually changing. Neither education measured formally by certification nor the skills presumably learned thereby will, in and of themselves, guarantee employment. Many factors, including subjective considerations, enter into employment decisions. There is, therefore, no simple minimum of skill attainment required by the employment market in general which can be used in a direct way to establish basic skill minimums for pupils graduating from the public school system. However, where requirements for entry-level jobs do fall within areas for which the schools are deemed responsible, they most frequently concern communications (reading and writing) and arithmetic.

2. Citizen/Parent/Social Skills -

   There are minimum competencies necessary to function in our society. This is attested to by the existence of expensive institutions and programs charged with the custodianship of individuals who, for one reason or another, do not possess these minimum competencies. Actually, the school systems themselves fall into this category. There is little guidance available as to what these basic skills are, or what levels of competence ought to be mandated. Nonetheless, what information is available points to an emphasis on reading, writing and arithmetic, and particularly on reading and arithmetic.

In the area of minimum basic employment skills the following conclusions were reached:

1. Business -

A survey was made of 15 New Jersey business firms - five each of large, medium and small businesses - selected randomly from traditional sources to explore the area of employment practices as related to minimum basic skills. Information was obtained by interviews and questionnaires. From this study, the following conclusions were drawn:

a. The issues surrounding hiring practices are viewed as volatile and dangerous due to the amount of court litigation over these issues in the recent past. Many firms resisted answering concerning their specific criteria for employment.
b. All firms contacted rely on impressionistic evidence at some stage of the selection process. Many factors play a part in the hiring process- - family, personal contacts, legal requirements where they exist, judged "aptitude." No amount of education, therefore, can guarantee a job, particularly since being "overqualified" for a job is as damaging as being "undergualified.
c. Requirements for employment most typically are specifically job-related and are becoming more so due to recent court decisions. Very few general academic requirements were found, although several firms indicated they preferred high school graduates, particularly for clerical positions. For some skilled occupations, trade school training and/or apprenticeship is required.
d. All moderate and large firms contacted have some jobs for which there are no educational requirements per se. Requirements for these jobs are typically concerned with such factors as health, dependability, ability to learn the job and some specific job-related skills. Therefore, it is not possible to set minimum educational standards at some minimum "required for employment" since for some jobs such minimums are essentially "zero."
e. Where basic school-related skills are specified for employment in entry-level jobs they are clustered in the areas of communications and arithmetic. The ability to use verbal and written language is a commonly stated requirement for clerical positions, and is considered important in a wide range of other jobs as well. Ability in arithmetic is not so commonly prescribed, but is considered essential to some jobs.
f. Those firms which use tests in selecting employees are typically large firms with specified requirements for each job. Such tests tend to be practical and job-related as opposed to the general academic tests often employed in the past. This is a direct result of court rulings requiring a demonstration of the validity of all such tests.

2. Government -

Civil Service offices in Washington, D.C., the Regional Office in New York, and State Offices in Trenton were contacted and interviews were held concerning hiring practices and criteria for federal, state, and local employment. Civil Service documents concerning job descriptions, criteria, etc., were reviewed.

Civil Service jobs are elaborately delineated and categorized. Minimum entry requirements for each job category are established by determining the necessary knowledge, skills and abilities. Much of this work is published in available government documents. The criteria in the published documents, however, are for skilled and professional level jobs. The criteria for the jobs at entry level in the trades and labor areas are contained only in the Internal Qualification Guides, which are not available to the general public. Permission to see these materials was refused. Therefore, for many jobs it is possible to determine the type of qualification required, but the specific level of mastery required for a given job is restricted. From the information that was made available to the Task Force, the following conclusions seem warrented:

a. The Federal Civil Service lists a number of jobs which have no educational requirements nor written test prerequisites. These jobs are often at the entry level. In addition, there are also "worker-trainee" designations specifically for those with poor educational backgrounds.
b. At entry level, a common pattern is to require experience or a specific educational criteria, like high school graduation, and/or a specific minimum performance on a test. There is a trend away from specific educational requirements, due to the difficulty in defining their validity legall, and to the Civil Service tradition of working up through the merit system. Even at skilled levels, job experience has become the primary criterion, but in its absence specific educational experiences may be substituted.
c. Like industry, and for similar reasons, the Civil Service is very concerned about the validity of tests used and other requirements. Tests tend to be very job specific rather than of a general educational nature.
d. A sample of entry-level jobs within the state Civil Service shows requirements specific to each job, but in addition the very general requirement that applicants be able to read and write English sufficiently well to be able to perform the job adequately.
e. The requirements established are minimums and there is some indication that government, like every other employer hires the best that they can find in terms of training and experience. Therefore, the de facto requirements can fluctuate with the job market.

3. Armed Services -

Recruiting personnel from all services were contacted concerning general requirements operative within the state. In addition, personnel at the district and command levels were interviewed, as well as personnel at the Armed Force Vocational Testing Group and the Navy Personnel Research and Development Center. The following conclusions are merited:

a. The armed services prefer to enlist high school graduates, but a diploma is not absolutely necessary.
b. All applicants are given the Armed Services Vocational Aptitude Battery and scores on this test are used in determining acceptance and career placement. The services are reluctant to reveal minimum score levels for enlistment since these levels fluctuate with supply and demand.
c. Enlistees are given reading tests and those falling below a 6th grade level are provided with remedial training.

In the area of minimum basic skills required for social roles, the following conclusions were reached:

1. No one yet knows the minimum skills and proficiency levels required to function in social roles in our society. Research is sparse, and is rarely targeted directly to the question.

For example, no definitive studies were found which attempted to determine from observation of actual life situations the minimum skills required for social and personal competence. Most of the existing information comes from the work of committees not unlike the Task Force attempting to select skill areas and competency levels by discussion and consensus. This is a reasonable procedure, but the great complexities of values, assumptions and approaches involved limit agreement among such committees and provide little basis for choice among them.

Other relevant information comes from official statements adopted by individual states attempting to define and reaffirm the purposes and priorities of primary and secondary education.

Common to all attempts to set guidelines in this area is a strong emphasis on reading, arithmetic and writing, and particularly on reading and arithmetic, as basic skills.

2. Studies of Basic Skill Areas -

a. Perhaps the most ambitious attempt to specify the functional competencies necessary for adult participation in society was conducted by the Adult Performance Level Project of the University of Texas at Austin. This project operated within the area of adult education and

was concerned, therefore, with identifying the areas of knowledge which delineated undereducated, underemployed adults from those enjoying more success.

Five Knowledge Areas -

From their research, project personnel concluded that five general knowledge areas were of primary importance: consumer economics, occupational knowledge, community resources, health, and government and law.

Four Skill Areas -

The project identified four skill areas which were required: communication skills (reading, writing, speaking, listening), computation skills, problem solving skills and interpersonal relations skills.

b. A second noted project from the field of adult education is the New York State External High School Diploma Program associated with Syracuse University. As its title suggests, this project is concerned with determining areas and levels of adult functioning which can be considered adequate for awarding diplomas to adults over 18 who did not complete high school. Four areas of competence were established as essential:

(1) Basic Skills -

Reading and computation, the ability to communicate effectively through writing, a visual media (like painting or dramatic performance), or through speech or other aural media (like musical composition or performance). The New York State Program proposes inflexible minimum standards in reading and computation skills only, and states that these standards be a requirement for the educational system as well as the individual.

(2) General Knowledge -

The project requires some "judicious admixtures" of knowledge in the following fields: language, math, science, social science and humanities (competencies in language and math are higher than those required under Basic Skills).

(3) Social and Political Skills -

Social and Political skills include a knowledge of individual and social consequences of personal and group behavior and include how groups and

individuals relate to American political institutions and processes.

(4) Personal and Career Planning Skills -

The ability to identify alternative futures, both personal and occupational, and to select among these and to pursue them productively is a requirement.

c. New York Regents Competency Tests -

It should be recalled that these areas were compiled for use with adults and cannot be applied indiscriminately to adults/children in school. For this latter purpose, the Board of Regents on March 26, 1976 approved a resolution establishing the passing of Basic Competency Tests in reading and mathematics as a requirement for issuance of a high school diploma. These tests are designed to measure the minimum skills and capabilities required of adults in order to function adequately. They will be given at Grade 9 with opportunity for retesting at later grades. Their use as a graduation requirement is scheduled to begin in June, 1979. Three additional tests are under development to be incorporated in 1980. These cover the areas of civics and citizenship, practical science, including health and drug education, and writing and language development.

3. New Jersey Educational Goals Statement -

Any determination of minimum basic skills, required competency levels and assessment procedures must take into account the ultimate goals and priorities of the educational system as a whole, and many states, including New Jersey, have adopted such goal statements in recent years. The goals were adopted in 1972 on the recommendation of a specially constituted Needs Assessment Advisory Council, composed of a representative cross section of the public. They included both "Outcome" goals, i.e., the knowledge and skills pupils should acquire in the public school system, and "Process" goals, i.e., the means by which such education ought to take place.

a. Outcome Goals -

"The public schools in New Jersey shall help every pupil in the State:

(1) To acquire skills in obtaining information, solving problems, thinking critically, and communicating effectively.

(2) To acquire a stock of basic information concerning the principles of the physical, biological and social sciences, the historical record of human achievements and failiures and current social issues.

(3) To become an effective and responsible contributor to the decision-making processes of the political and other institutions of the community, state, county and world.

(4) To acquire the knowledge, skills and understanding that permit him/her to play a satisfying and responsible role as both producer and consumer.

(5) To acquire job entry-level skills and also to acquire knowledge necessary for further education.

(6) To acquire the understanding of and ability to form responsible relations with a wide range of other people, including but not limited to those with social and cultural characteristics different from his/her own.

(7) To acquire the capacities for playing satisfying and responsible roles in family life.

(8) To acquire the knowledge, habits and attitudes that promote personal and public health, both physical and mental.

(9) To acquire the ability and the desire to express himself/herself creatively in one or more of the arts, and to appreciate the aesthetic expressions of other people.

(10) To acquire an understanding of ethnic principles and values and the ability to apply them to his/her own life.

(11) To develop an understanding of his/her own worth, abilities, potentialities and limitations.

(12) To learn to enjoy the process of learning and to acquire the skills necessary for a lifetime of continuous learning and adaption to change."

b. Process Goals -

"The public schools in New Jersey shall provide:

(1) Instruction which bears a meaningful relationship to the present and future needs and/or interests of pupils.

(2) Significant opportunities consistent with the age of the pupil, for helping to determine the nature of the educational experiences of the pupil.

(3) Specialized and individualized kinds of educational experiences to meet the needs of each pupil.

(4) Opportunities for teaching staff members and pupils to make recommendations concerning the operation of the schools.

(5) Comprehensive guidance facilities and services for each pupil.

(6) An environment in which any competition among pupils is positive.

(7) Resources for education, used with maximum efficiency.

(8) Teaching staff members of high quality.

(9) Diverse forms of constructive cooperation with parents and community groups."

4. Goal Statements and Basic Skills in Other States -

While the goal statements of the various states vary widely in format and purpose, they represent a rich resource in determining what has been attempted in identifying important areas for education.

a. Basic Skills -

By 1973, 42 states had adopted official goals statements which were collected and reproduced by the Cooperative Accountability Project. Of these, 22 included sections interpretable as statements of "basic skills." Table 1 presents the number of times certain skills were mentioned under that category or in direct association with reading and mathematics.

TABLE 1

NUMBER OF STATES CLASSIFYING CERTAIN ITEMS AS BASIC SKILLS

Reading	22
Mathematics	22
Writing	17
Speaking	15
Sciences (natural, behavioral, social)	13
Listening	12
Problem Solving	8
Art	6
Literature	2
Drame	2
Music	2
Humanities	2
Viewing	2
English	1
Foreign Language	1
Spelling	1
Vocational-Technical	1

It is clear from this listing that reading and mathematics are still considered to be primary basic skills in the schools of the United States. There is less concurrence on what the third basic skill should be, but writing is the leading candidate. The three "R's" remain the skills of fundamental concern to the schools.

b. Citizenship -

Most state goal statements make some reference to the area of citizenship and a few set aside a section where learning outcomes are specified. The following example from Massachusetts is included to illustrate the nature of such statements:

"Education should provide each learner with a knowledge and understanding of how our society functions in theory and in practice; education must also foster individual commitment to exercise the rights and responsibilities of citizenship and to protect the rights of others.

"Citizenship in a democratic society is meaningful when there is effective participation by individuals in its political, economic, and social

institutions. Effectiveness is enhanced through knowledge of these institutions, by acceptance of responsibility for living within and improving them, by familiarity with the methods of effecting change, and by respect for the civic attitudes and behavior of others.

c. Social Participant -

The goals statements of several states include some reference to personal and interactive social skills and understandings as a category. The goal statement for Kansas is representative:

"Social Relations - -

1. an understanding of cultures different from the learner's such as food, shelter, clothing, occupations and unique social relations;
2. an understanding of society's influence on the learner's way of thinking and way of life;
3. an understanding of how the learner may affect the progress, conditions, and forces operating in the world around him;
4. an awareness of the interdependence and interrelationship among peoples, regions, and nations:
5. an awareness of the contributions of many different peoples to the learner's way of life;
6. a knowledge of the means of communication between individuals, communities, states, and nations;
7. an ability to compare and contrast rural and urgan, farm and city, and affluent and low income ways of life;
8. an awareness of how and why social groups develop and change such as family, school, and community;
9. an awareness and understanding of the various ethnic and socio-economic life styles common to our total culture."

d. Parent -

Few states make direct reference to teaching skills of parenthood, although this learning is subsumed under many other headings. The goal statement of Delaware is typical:

"Education in Delaware will provide the opportunity for each learner, to the extent of his individual ability, to develop an appreciation of the family as a basic unit of society.

- To learn about and develop skills related to home and family responsibilities.
- To understand his role and the role of each family member.
- To recognize and understand family-type social units which are evolving in today's culture."

The following statements summarize our conclusions to this point:

1. Many employers, because of recent court rulings that all job requirements must be job related, hesitate to specify any minimum basic skills which can be related to the schooling process.

2. The Civil Service Commission has developed sophisticated analyses of the knowledge, skills and abilities needed as minimum entry requirements for each Civil Service job category, but only those criteria for skilled and professional level jobs are made public. Criteria for entry level jobs in the trades and labor area are not available to the public.

3. A study of employment practices and procedures, and a review of state educational goal statements, including New Jersey's "Outcome" and "Process" goals, indicate that those who do address themselves to the question of which skills can be considered minimal for functioning in society most frequently mention the three "R's" - - reading, writing and arithmetic - - with particular emphasis on reading and arithmetic.

The second major issue with which we concerned ourselves was the question of the assessment of minimum basic skills.

Assuming that minimum basic skills for attaining a job and for carrying out various other social roles have been identified, and further assuming that those skills are or can be taught in the school system, how are minimum student competencies in those areas to be assessed, within the context of present state regulations, laws and Administrative Code objectives?

One answer is applied performance testing, or competency tests,* which are simple measures of performance in an actual or simulated situation.

Competency tests can be used to measure a wide spectrum of behavior. They can be applied to specific jobs in specific settings, to basic educational skills like mathematical computation, or to more general capabilities

The United States government, as well as business and industry, uses performance tests to determine qualifications for job applicants. For instance, the Government Printing Office utilizes performance measures for various printing tasks as the basis fpr selecting new employees, and the Gederal Aviation Administration uses proficiency tests to evaluate the success of training programs.

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*The following material has been adapted from Competency Tests and Graduation Requirements, published in 1975 by the National Association of Secondary School Principals, (NASSP), Reston, Va 22091.

In secondary schools, driver training is the most obvious type of performance test. Writing an essay or solving an equation, however, are also performance tests. Competency may be measured by paper and pencil tests as well as by other means.

Use of performance tests will likely accelerate since recent court decisions have required employment tests to be directly related to the actual job (skill).

The critical element of a performance test is its authenticity. Performance tests may be simulated, of course, but the simulation should mirror the real world. Certainly they should involve the application of both skills and knowledge.

The ffective use of competency-based education depends upon a clear understanding of objectives, and a precise statement of the behaviors that demonstrate the required competency levels.

Since competency-based education emphasizes the achievement of specified objectives, and not the ranking of learners, schools may provide a variety of instructional routes for students. One major thrust of competency-based education, therefore, is to provide alternative settings for learning, often outside of the school.

Competency or proficiency tests are criterion-referenced measures. Such are not designed to determine an individual's relative standing in some norm group. Rather, they tell what an individual can or cannot do with certain specific requirements.

Most standardized achievement tests are survey tests designed for interpreting pupil standing in his/her peer group. It is, however, possible to use them as performance measures. Cutoff scores or criterion levels can be set by a school district in defining the competencies it considers important. Teachers can then be asked to evaluate the individual items on the test for content validity and for level of difficulty.

Most measurement personnel, however, would probably recommend a specially tailored, criterion-referenced test to determine minimum basic skills competency levels.

Expecting high school students to demonstrate proficiency in important areas of the curriculum is consistent with sound educational practices. The issues raised about competency testing focus on other matters, like the definition and determination of the proficiency levels to be required. Some of the considerations in the design and use of such tests follow:

1. Goals -

   To establish and define proficiency levels, the goals must be clear, precise, and understandable. Without such a clear statement, the usefulness of competency tests is questionable.

2. Test Uses -

   How the test will be used will help determine its design. Will it be applied as an indicator of general knowledge or as a demonstration of specific minimums? Will the tests be linked to graduation? Or, will passing the test result in a certificate, an additional credential, or an endorsement on the traditional diploma. Competency tests should serve not only as an opportunity for students to identify deficiencies and to demonstrate important skills but, more importantly, to provide an impetus for revising program sequence and content to help students reach desired levels of competency.

3. "Proficiency" -

   Directly connected to the question of test purpose and use is the problem of defining "proficiency." Will the school test proficiency skills and knowledge learned in school, or test the application of learning to tasks required outside of school? Or will the school test both areas?

The minimum acceptable level of proficiency or achievement must be established. Will that minimum be pegged at a certain grade level equivalent on a standardized test? If so, what grade level will be acceptable? Or will the minimum level be a certain percentage accuracy on a test of skills or behaviors to be learned? Or will results be reported on a "pass-fail" basis? Or will they be defined at specified levels of competency above base line requirements?

4. Experience -

   Criterion levels are generally based on experience, and they change as society changes. Thus, tests must be reexamined and altered as information is gathered.

5. Norms vs. Standards of Competency -

   School systems must not confuse norms, i.e., how a student ranks in relation to others in knowledge, with standards of competency, i.e., what a student actually knows how to do. A test designed for one purpose does not necessarily satisfy another purpose. In addition, schools must make certain that proficiency tests measure behavior that reflects the learning opportunities of the students.

Approaches to Developing Proficiency Tests -

One practice is for individual schools or school systems to develop instructional objectives and then write test items which meet these objectives. Test items can reflect noncognitive as well as cognitive outcomes.

A second practice is to tap existing pools of test items. Test items appropriate to examine varicus competencies are being developed by a number of organizations including the Educational Testing Service, Westinghouse Learning Corp., the UCLA Center for the Study of Evaluation, and the Clearinghouse for Applied Performance Testing.

Either approach may be used successfully. The important issue is not the source of the test items, but their appropriateness to the performance being measured.

The specific issue of how statewide testing should be accomplished was first addressed by attempting to gather information on how other states and municipalities are assessing minimum basic skills.

The following is a summary of such activity.*

1. Arizona -

   Requires verified competencies for graduation for the class of 1976. To receive a diploma in Arizona students must demonstrate a ninth grade reading level. Currently, Arizona is the only state with such a graduation requirement.

2. California -

   The California Legislature in 1969 enacted minimum requirements in reading and mathematics, thus becoming the first state to establish a specific level of achievement for the high school diploma. The requirement, however, was repealed because of loopholes in the law. Many objected to all school districts in the state having to meet a single standard. Subsequently, a law was passed specifically forbidding state authorities from adopting statewide minimum standards for high school graduation. Currently, the state's Superintendent of Public Instruction is asking the legislature to require that every student achieve a certain level of competency as well as a skill marketable to an employer

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*Compiled from Competency Tests and Graduation Requirements, cited earlier.

3. Oregon -

In 1973, the Board of Education established six goals for the public schools. Based on them, 20 areas of personal, social and career development were identified as necessary for survival in contemporary life. Competency must be demonstrated in each area, but the level of competency is determined by each local district. Starting in 1978, these areas of competency will become part of the requirements for a high school diploma. The areas of minimum survival-level competencies are:

a. Personal Development -

To survive and grow as an individual, it is necessary to develop basic skills (reading, writing, listening, speaking and analyzing); understanding scientific and technological processes; understanding the principles involved in maintaining a healthy mind and body; and the skills to remain a lifelong learner.

b. Social Responsibility -

Good citizenship requires the ability to cope responsibly with local and state government as well as national government; in personal interactions with the environment; on the streets and highways; and as a consumer of goods and services.

c. Career Development -

To survive and advance in any career area, students are asked to develop entry level skills for their chosen career fields; good work habits and attitudes; the ability to maintain good interpersonal relationships; and the ability to make appropriate career decisions.

d. Local Assessment -

Local school boards may establish the performance indicators they are willing to accept as evidence that the student has indeed developed the required competencies. Not all competencies need to be developed in the school situation, but school personnel are expected to evaluate competencies learned both in and out of school as the student works toward the high school diploma.

4. Virginia -

The Virginia Standards of Quality Act, effective July 1, 1976, requires minimum statewide educational objectives and a uniform statewide testing program in basic skills within two years. The requirements include functional literacy, computational skills, a basic knowledge of U.S. history and culture, and either the ability to enter a post-secondary school or the attainment of a job skill sufficient to make employment possible.

5. Florida -

The State Commissioner of Education has proposed a special diploma that would certify a minimum competency in certain basic skills. Students could earn a "regular" diploma without passing the competency test, but they would receive special recognition for passing it.

6. New York -

The New York State Basic Competency Tests, which are administered as early as the ninth grade, measure achievement in five areas: reading, mathematics, civics and citizenship, practical sciences and health, and writing skills. The reading and math tests will become requirements for a diploma starting with the class of 1979. The other tests will be administered on an experimental basis beginning in October, 1976. New editions of the tests will be available in January and June each year.

7. Louisiana -

The State Board of Education has considered a proposal by a board member calling for statewide minimum competency requirements in reading and math, with proficiency levels set at 10th grade level as graduation requirements. The State Department of Education is studying the proposal.

8. Maryland -

The State Board of Education is currently considering various forms of proficiency and graduation requirements.

9. Denver, Colo. -

For 15 years, Denver has required that graduates demonstrate proficiency in four areas: language, reading, spelling and arithmetic. There are also course credit requirements. The proficiency tests are initially administered in the first semester of ninth grade. For students who fail, remedial classes are established and students retested. By senior year, only one and one-half percent of the class does not reach the desired level of competency on one or more of the

tests. Certificates of attendance are presented to students who have not passed the competencies or the required number of credits but who have maintained adequate attendance.

10. Omaha, Neb. -

For a Westside Community Schools diploma, proficiencies must be demonstrated in reading, writing, oral communication, mathematics, consumerism, the democratic process, and problem-solving. Tests are administered at various times during the first three years of high school, and opportunities for remedial training are available before retesting.

11. Gary, Ind. -

Starting with the class of 1977, students will be required to pass a reading proficiency test for graduation. Tests in writing, spelling and mathematics are under development.

12. The Nebo School District, Spanish Fork, Utah -

has instruments to verify competencies in career education, music, typing, physical science, geography, mathematics, home economics, English and art.

13. The Salt Lake City School Board -

has voted to establish competency-based instruction and to initiate graduation requirement assessment testing. Tests in English and mathematics are under development.

14. The Los Angeles Board of Education -

passed a resolution in January, 1976 that all candidates for a high school diploma demonstrate proficiency on a reading test sufficient to affirm that the student graduates read and comprehend at a level necessary to survive in society.

15. The Anchorage Borough School District -

adopted in 1975 two proficiency requirements for graduation: basic English and math skills. Students who do not pass the exams in the tenth grade are required to enroll in and pass special remedial courses in these areas.

16. Parkrose School District, Portland, Oregon -

has developed several instruments to verify graduation requirements - competencies in mathematics and writing.

17. Duval County, Florida -

has developed a functional literacy test to verify the basic skills required for graduation.

18. Greensville County, Virginia -

has adopted a program of minimum standards from elementary grades through high school.

19. Phillips Academy, Andover, Mass. -

requires students to demonstrate competencies in reading and writing to qualify for graduation.

20. The Craig City School District, Craig, Alaska -

has adopted a spectrum of performance objectives. As a student masters a specific set of objectives, credit is given toward graduation. Mastery is determined by performance tests along with other measures.

21. The St. Paul Open School, St. Paul, Minn. -

verifies experiences and competencies in each of six general categories to fulfill graduation requirements.

The issue of the use of competency tests as graduation requirements raises both administrative and philosophical* questions:

1. The administrative question involves the grade level at which tests should be administered. Competency testing should be administered early enough in the pupils school career so that effective remedial training can be undertaken by those who initially fail to meet minimum requirements.

2. The philosophical question concerns the students who do not qualify for a competency-based diploma. To recognize students who have spent four years in high school but who still lack certain competencies, various suggestions have been made, including:

    a. Special diplomas
    b. Certificates of attendance
    c. Diplomas with endorsements and/or non-endorsements of competencies met

*Also taken from the NASSP publication, Competency Tests and Graduation Requirements, cited earlier.

3. Positive Aspects of Competency Testing for Graduation -

   a. It demands that educators and the public squarely face the question of what a high school education is and should be;
   b. Carefully organized teaching and carefully designed sequential learning will probably result;
   c. Slow learners and underachievers will likely receive direct and immediate attention;
   d. Courses of study will likely be revised to correct identified deficiencies;
   e. Subjects leading to the development of competencies will receive additional emphasis;
   f. Alternatives and options not requiring attention on class will likely be broadened;
   g. The senior year may gain more holding power because of a new focus on requirements and options;
   h. The community will know the minimum performance required in specific subject areas for the diploma.

4. Possible Negative Aspects on Competency Testing for Graduation

   a. Confusion over the meaning of a high school diploma will continue if each district identifies its own level of competencies and performance indicators;
   b. The emphasis on pragmatic and practical competencies may result in erosion of liberal education;
   c. The emphasis on measurable outcomes could result in less attention being paid to areas where results are more difficult to measure,
   d. The record-keeping system could become burdensome to both teachers and administrators,
   e. The conflict between "humaneness" and "accountability" may be intensified as criteria are established and clarified;
   f. Community disagreement may arise over the nature and difficulty of competencies,
   g. Dropouts could increase depending upon the level of minimum competencies;
   h. Expectations for improvements in student achievement could exceed actual performance.

5. NASSP Recommendations on Competency and Graduation -

   The National Association of Secondary School Principals makes the following recommendations concerning high school graduates:

   a. That graduates be competent in the basic skills at a level sufficient to learn job specifications or to pursue the requirements to enter postsecondary education.

b. That graduates possess the skills to acquire the information necessary to be a citizen and a worker.
c. That the graduate should be sufficiently knowledgeable about the democratic processes, and experienced in group discussion so as to be an informed voter. capable of functioning in the local community.
d. That requirements for a diploma should therefore include these verified attributes:

(1) an ability to read, write, and compute with a specified proficiency

(2) an acquaintenship with the American experience, to include an understanding of the process and structure of democratic governance

(3) the successful completion of a series of courses and/or planned experiences, some of which involve a group setting.

Finally, the state of New Jersey has for some time now assessed educational goals through the use of the New Jersey Educational Assessment Program (NJEAP). One possibility that was considered by our group was the use of the NJEAP as a test of minimum basic skills.

We arrived at the following conclusions:

1. Background and Development of the NJEAP -

The New Jersey Educational Assessment Program was undertaken by the New Jersey State Department of Education to provide information to education decision makers on the state and local levels concerning New Jersey's educational system.

Long-range Goals -

The long-range goals of the EAP are to assess the atatus of New Jersey's educational system relative to the statewide goals previously herein listed. The EAP endeavors to provide information useful in planning and evaluating educational programs designed to meet these goals.

Program Intention -

The intent of the program is to assist in the identification of local school districts which have conducted programs which are especially successful and those which are in particular need of assistance. In addition to providing local school districts with information relevant in the asaessment of student progress, the EAP provides information to local districts that

will be helpful in making decisions about the allocation of resources and the design, implementation and evaluation of educational programs. The program began in the fall of 1972 with the testing of fourth and twelfth grade students for achievement in the basic skills of reading and mathematics.

2. Adequacy of NJEAP as a Minimum Basic Skills Measure -

NJEAP was not designed as a measure of Minimum Basic Skills competency. Teachers were originally asked to "rate topics on the basis of what is actually taught rather than on the basis of which topic they thought should be taught." In other words, the tests are geared to measure those "...skills identified by teachers as having been taught by the time students enter grade four, grade seven, grade ten or grade twelve," and not those skills which students are expected, at a minimum, to acquire by these grades.

Test Results -

Tables 2 and 3 (pp. 23-24) represent analyses of performance on the 1975-76 NJEAP. Table 2 shows performance on individual test items by 4th and 12th graders in DFG "A",[5] the lowest socioeconomic background status. This table indicates the number of test items gotten right by different percentages of students in this group. As shown, there are 28 items, or 30 percent of the test, on which fewer than 65 percent of the students got correct answers.

On fourth grade mathematics, fewer than 65 percent of the students get correct answers on 38 items, or 53 percent of the test.

If the tests were measures of minimum basic competency, one would expect the majority of items to be answered correctly by 80 or 90 percent rather than 65 percent, and for virtually all of the items to be gotten right by 65 percent rather than only a little more than half.

Performance by 4th and 10th grade students in the DFG's A, E and J, the lowest, middle and highest SES groups, appear in Table 3, and reinforce and confirm the results in Table 2.

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[5]DFG -District Factor Grouping is based on variables contributing to a district's socioeconomic status (see page 65 for more details on DFG).

TABLE 2

NJEAP - ITEM PERFORMANCE ANALYSIS

(1975-76; DFG A)

	4th Grade		12th Grade	
	Reading	Mathematics	Reading	Mathematics
% Correct	Number of Items	Number of Items	Number of Items	Number of Items
90 - 99	13	2	5	8
80 - 89	24	11	17	13
70 - 79	23	14	17	14
65 - 69	7	7	6	12
60 - 64	7	2	12	8
50 - 59	8	13	14	13
40 - 49	9	13	6	14
30 - 39	4*	4	3+	5
20 - 29	0	5**	0	2
10 - 19	0	1***	0	0
0 - 9	0	0	0	0
	95	72	80	89
65 - 99	67 (70%)	34 (47%)	45 (56%)	47 (53%)
0 - 64	28 (30%)	38 (53%)	35 (44%)	42 (47%)

* Very tricky or very difficult items missed in most DFG groups (e.g., for DFG J, passing per cent. on these items were 72, 54, 59, 62).

** None of these items were passed by 65% or more of the DFG J Students.

*** Passed by 13% of the DFG J Students.

\+ Gotten right by 54, 63, and 71% respectively in DFG J.

TABLE 3

NJEAP STUDENT PERFORMANCE ANALYSIS

(1975-76; DFG A, E, J*)

% Correct (or lower)	4th Grade READING % of Students			4th Grade MATHEMATICS % of Students			10th Grade READING % of Students			10th Grade MATHEMATICS % of Students		
	A	E	J	A	E	J	A	E	J	A	E	J
80	58	22	12	83	52	34	72	45	26	84	60	41
70	39	10	5	63	27	15	56	26	13	70	41	24
60	24	4	2	46	14	8	39	13	6	54	25	14
50	13	2	1	30	7	3	24	6	3	34	13	7
Above 80%	42	78	88	17	48	66	28	55	74	16	40	69
Above 70%	61	90	95	37	73	85	44	74	87	30	59	76
Above 60%	76	96	98	54	86	92	61	87	94	46	75	86
Above 50%	87	98	99	70	93	97	76	94	97	66	87	93

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* DFG A: N = 21,700

DFG E: N = 7,400

DFG J: N = 9,200

Whole State: N = 100,000

DFG A: N = 15,500

DFG E: N = 9,000

DFG J: N = 9,000

Whole State: N = 107,000

If the NJEAP measures Minimum Basic Competency, then we are confronted by large numbers of students who lack these minimum competencies. However, it is equally likely that something other than minimums are being measured by the test.

3. Possible Use of NJEAP to Determine Districts Achieving the Minimum Basic Skills (MBS) Mandate -

A study of the relationship of the abilities tested by the NJEAP as compared with minimum basic skills competency shows, therefore, that the two are not the same. Nevertheless, NJEAP scores can serve as a very rough proxy of the degree to which districts are achieving the MBS mandate. Districts with relatively high EAP scores can be expected to contain relatively few students with severe MBS problems, while other districts, with relatively low EAP scores, can be expected to have a comparatively large number of MBS deficient pupils.

Which are these districts? Preliminary findings indicate that the lower socioeconomic class or DFG districts can be expected to suffer from the most severe MBS underachievement problems.

This relationship is indicated in Table 4, page 26. It lists the average 1975-76 EAP test results (for grades 4, 7, 10 and 12) for the State as a whole as well as for the idfferent DFG groups. This table shows that both the EAP reading and mathematics scores increase as one goes from the lower to the higher DFG groups.

In summary, we have noted that:

1. Criterion-referenced applied performance testing has been successfully used by business, government and educators to determine whether or not specified objectives of performance have been met.

2. Several states and municipalities have adopted minimum basic skill standards and competency assessment procedures, although only one state - Arizona - makes passing such a test a graduation requirement at this time.

3. The NJEAP was not designed for use as a minimum basic skills test. Nonetheless, some test items do measure minimum basic skills, and could form the basis for preliminary MBS testing in advance of the design of specialized instruments for that purpose. The test results could also serve as a rough proxy of the degree to which districts are now achieving the MBS competency mandate.

TABLE 4

DFG READING AND MATH SCORES

Grade	DFG A	B	C	D	E	F	G	H	I	J
Grade 4										
Average READING SCORE	74.0	78.9	79.6	81.5	82.7	83.0	83.2	84.2	85.1	85.8
SD READ	6.7	4.8	4.5	3.4	2.7	2.7	3.0	1.9	2.5	1.9
Average MATH SCORE	48.2	51.9	52.5	54.1	54.7	55.6	56.1	56.6	57.9	58.9
SD MATH	5.8	4.4	7.3	3.4	2.8	3.3	2.8	1.9	2.8	2.0
Grade 7										
Average READING SCORE	60.9	66.1	66.7	68.9	69.7	70.2	71.6	72.8	77.5	76.2
SD READ	7.9	5.8	5.1	3.7	3.6	3.5	2.9	3.0	2.6	2.0
Average MATH SCORE	49.6	54.0	54.2	55.7	56.4	57.5	58.7	59.7	61.5	63.6
SD MATH	6.4	6.1	5.2	7.2	3.9	4.7	3.0	3.1	2.9	2.4
Grade 10										
Average READING SCORE	55.4	59.2	58.1	61.7	62.0	63.1	63.4	64.8	66.1	68.2
SD READ	5.8	3.5	4.9	2.4	2.4	1.4	2.3	2.0	1.5	2.4
Average MATH SCORE	56.8	60.2	59.8	63.8	64.4	65.4	66.0	67.5	69.1	72.3
SD MATH	6.5	7.9	6.3	2.6	3.1	2.5	3.2	3.5	2.5	3.7
Grade 12										
Average READING SCORE	58.0	60.6	60.1	62.6	62.8	64.3	64.0	63.3	66.5	66.6
SD READ	4.7	2.2	4.0	2.1	2.3	1.3	2.0	1.8	1.3	8.2
Average MATH SCORE	61.6	64.3	63.7	67.1	67.8	69.5	69.0	70.9	72.7	73.8
SD MATH	5.8	4.0	4.9	2.1	3.5	2.0	2.9	2.7	1.8	5.3

	4	7	10	12
State READING Average	81.6	69.8	61.0	62.8
State SD READ	5.1	6.2	5.0	4.7
State MATH Average	54.4	57.0	64.2	67.8
State SD MATH	4.7	5.9	6.2	5.6

SD - Standard Deviation

Data for all EAP analyses (Tables 2, 3 and 4) were provided by the New Jersey Department of Education. Them results are contained in the most recent NJEAP annual report.